

## **Explanation of the problems in using IO extender 8AIX**

We are monitoring power generated from 9 small wind turbines located at different location.

Each of the output voltage and current is measured by current and voltage sensors which have the output of 4-20mA . Finally they are connected to AI-8 of two IO Extenders 8AIX. The input current range is 0-2A and the input range is 0-12V. If the setting and connections are correct then we should be getting the range of input 4-20mA = 0-2A or = 0-12V. (the 4 can be obtained by setting ON the dip switch)

However, our initial setting has resulted in 5 digits reading. In the absence of user manuals and after several trial and errors, we still failed to obtain the right input values.

Strangely if any of the sensor output connected to AI of Netbiter Easyconnect E300, the reading is between 4-20mA .

### **Q1. How to set input A1-8 to read 0-20mA on IO 8AIX**

As there is no instruction available can you please guide to set the input to read 0-20mA.

Yes you did explain in your email how to do this by converting 0-4096 according. Our questions are as below

1. Why we need to set the input type to 0-4096 then convert it to 0-20Ma
2. Even by setting the input to 0-4096 , our readings obtained seem incorrect, because when the turbine is not spinning the reading should be = 0

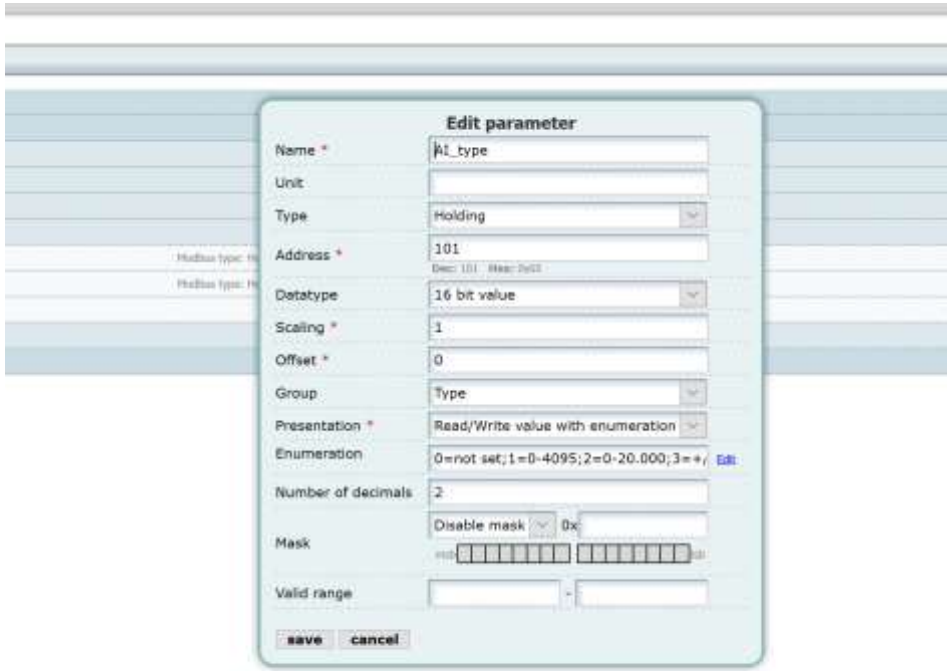
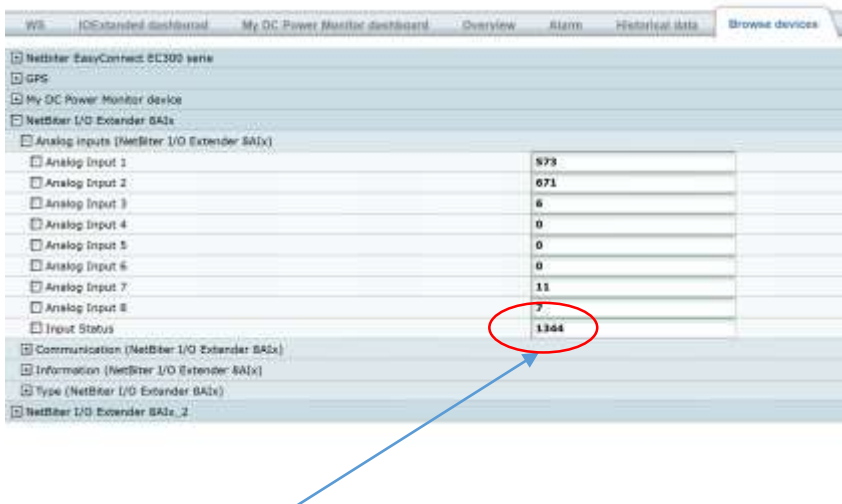


Figure 1 How to set these parameters. We expect minimum changes. Do we need to specify all parameters? What are their meanings?

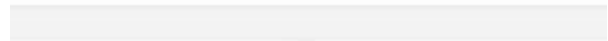
**Q2 What are bit 1 and bit2 and where are they located**

From figure 2 , we are trying to hard to figure out what and where these bits are?

Where is bit1 and where is bit2 . Please refer to figures below



Bit 1 and bit2 here ???? how to read this



**DIP Switch Settings**

Switch	Function	Description
1-7	NOOE ID	Modbus Node ID — See <i>Modbus Node ID Setting, p. 8</i>
8	OFFSET	ON = inputs are loaded to accept a 4 mA offset
9	OUT OF RANGE	Out of range is given when the input is too negative or too positive. OFF = the analog value will be loaded with -32767 when out of range. ON = the analog value will be loaded with 32768 when out of range.
0	BAUD RATE	OFF = 9600, ON = programmed. See <i>Communication Settings, p. 8</i>

**Data Registers**

MODULE TYPE = 104

Modbus Register	Register Name	Low Limit	High Limit	Access	Comments
30001	S/W Version / Module Type	N/A	N/A	R	High byte = Software Version Low byte = 102
30002	Analog Input 1	0	4095	R	Analog inputs in lower 12 bits.
30003	Analog Input 2	0	4095	R	
30004	Analog Input 3	0	4095	R	
30005	Analog Input 4	0	4095	R	
30006	Analog Input 5	0	4095	R	
30007	Analog Input 6	0	4095	R	
30008	Analog Input 7	0	4095	R	
30009	Analog Input 8	0	4095	R	
30010	Input Status	0	65535	R	
30100	DIP Switch	0	65535	R	Status of DIP Switch on Front Panel
40121	Baud Rate	2400	11520	R/W	2400, 4800, 9600, 19200, 38400, 57600, 115200
40122	Parity	0	2	R/W	0 = none, 1 = even, 2 = odd
40123	Stop Bits	1	2	R/W	1 = 1 stop bit, 2 = 2 stop bits
40124	Reply Delay	0	65535	R/W	0 = Disable, >0 = Enable (x10 ms)

**Analog Input Registers**

The analog inputs are read as a 12 bit value in the registers as follows:

MSB	IOX-BAIS Analog Inputs												LSB	Address		
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	300xx
32768	16384	8192	4096	2048	1024	512	256	128	64	32	16	8	4	2	1	300xx

